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GERMAN PATENT OFFICE

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(54) Title of the Subject: **Stomach Balloon for Weight Loss**

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Stomach Balloon for Weight Loss

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The present invention pertains to a stomach balloon for weight loss which can be filled with a liquid in the stomach.

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A stomach balloon of the type mentioned in the introduction is known from DE-PS 28 22 925. It is a plastic envelope that is implanted in the stomach by means of an endoscope under visual control. The stomach balloon has, in its envelope, a one-way or lip valve, via which a liquid can be supplied to it in situ from outside via a flexible tube. In the filled state, it largely fills out the volume of the stomach and thereby, as medical experiments have shown, causes a reduction in the hunger feeling. The reduction of food intake resulting therefrom leads to a weight loss of the patient.

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The balloon filled in the stomach shall be removed again after a medically predetermined time. The stomach balloon is, however, frequently also discharged spontaneously, if, for any reason, the liquid contained in it has leaked out. Observations have shown that with the envelope materials currently used, such a spontaneous discharge occurs six to nine months after implantation. The spontaneous discharge of the stomach balloon may lead to intestinal block, which makes necessary a surgery, i.e., a surgical removal of the balloon from the gastrointestinal tract.

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In a few cases, as medical observations have shown, upper abdominal complaints and ulcers occur due to the implantation of the stomach balloon, which may indicate a premature removal of the stomach balloon. This removal of the balloon should be able to be done quickly and without pain.

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It has been proved that the previous method for removing the balloon, namely the puncturing of the balloon and grasping with a loop or another gripping tool introduced through the esophagus via an endoscope leads to detrimental effects for the patient or difficulties in the removal. Frequently, the balloon cannot be grasped in this method, so that hope must be placed on a problem-free discharge through the intestinal tract.

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The basic object of the present invention is to develop the stomach balloon of the type mentioned in the introduction so that a relatively simple removal from the stomach is possible via the esophagus.

This object is accomplished with the stomach balloon according to the present invention by means of a hook, an eyelet or the like on the outer surface of its envelope.

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By means of the said hook, eyelet or another securing device, it is possible to grip the balloon under endoscopic control with a gripping tool introduced into the stomach via the esophagus, especially by means of endoscopic forceps, and thus to extract the balloon from the stomach via the esophagus.

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To facilitate the manufacture of the stomach balloon together with a securing device, provisions are made according to a variant for the hook, eyelet or the like to be made of the same material as the envelope. The hook, eyelet or the like may especially consist of silicone, just as the balloon envelope.

The said hook or the said eyelet can advantageously be bonded or glued on the envelope, so that durability is guaranteed even over longer periods of time, e.g., six to nine months.

5 If according to the state of the art the stomach balloon is to be provided with a valve for the purpose of supplying the liquid, then it is advantageous to arrange the hook, eyelet or other securing device in the immediate vicinity of the valve. This likewise facilitates the manufacture.

Two exemplary embodiments of the present invention are described in greater detail below.

10 Figure 1 shows a ball-shaped stomach balloon for weight loss that is provided with an eyelet, and

Figure 2 shows an oval-shaped stomach balloon that is equipped with a hook for extracting.

15 According to Figure 1, a stomach balloon 1 for weight loss has a – ball-shaped in the filled state – envelope 2. This envelope 2 preferably consists of an expandable plastic [obvious typo in the original – Tr.] such as silicone, which has proved to be resistant to gastric acid and other digestive fluids. The envelope 2 is provided with a one-way or lip valve 4. Via this [valve], liquid 6 can be introduced into the interior of the envelope 2 after introduction of an endoscope (not shown) into
20 the stomach under control. An eyelet 8 is arranged on the outer surface of the envelope 2 in the immediate vicinity of the valve 4. This eyelet 8 is bonded with its ends at the points 10 on the outer surface of the envelope 2. Another type of fastening, for example, gluing, may also be selected. The eyelet 8 consists of the same material as the envelope 2, in the present case, i.e., of silicone. If necessary, the physician may grip the balloon – after puncturing and draining the liquid 6 – at the
25 eyelet 8 by means of a (not shown) gripping tool, for example, an endoscopic forceps and extract it from the stomach via the esophagus.

Figure 2 shows a second embodiment of a stomach balloon 1. This stomach balloon 1 comprises an envelope 2 which has an egg shape (or oval in cross section) after filling with a liquid 6. This shape
30 has the advantage that complaints of the patient during implantation can be limited to a minimum as a result of the good adaptation to the shape of the stomach. Moreover, this shape has the advantage that, in case of a spontaneous discharge resulting from a leak, the then approximately cigar-shaped, shrunk envelope 2 experiences a relatively simple passage through the intestine.

35 In the embodiment according to Figure 2 as well, a securing device is arranged on the outer surface of the envelope 2. This is especially a hook 20, which likewise consists of the same material as the envelope, i.e., preferably of silicone. The hook 20 is rigidly and durably connected to the envelope at points 22, for example, likewise by bonding. After draining the liquid 6, the stomach balloon 1 can be removed with a gripping tool, for example, a loop pushed through an endoscope.

40 As an advantage of the embodiments according to Figures 1 and 2, it turns out that the eyelet 8 and the hook 20 are relatively flexible, so that they can be placed on the surface of the envelope 2. This can be achieved by the hook or eyelet surface being aligned at right angles to the surface of the envelope 2. The hook 20 or eyelet 8 can be largely integrated into the valve 4.

45 6 patent claims
2 figures

Patent Claims

1. Stomach balloon for weight loss, which can be filled with a liquid in the stomach, characterized by a said hook (20), a said eyelet (8) or the like on the outer surface of its said envelope (2).
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2. Stomach balloon in accordance with claim 1,
characterized in that the said hook (20), the said eyelet (8) or the like consists of the same material as the said envelope (2).
- 10 3. Stomach balloon in accordance with claim 2,
characterized in that the said hook (20), the said eyelet (8) or the like consists of silicone.
4. Stomach balloon in accordance with one of the claims 1 through 3,
characterized in that the said hook (20) or the said eyelet (8) is bonded or glued on the said
15 envelope (2).
5. Stomach balloon in accordance with one of the claims 1 through 4 with a valve in the envelope,
characterized in that the said hook (20), the said eyelet (8) or the like is arranged in the immediate
vicinity of the said valve (4).
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6. Stomach balloon in accordance with one of the claims 1 through 5,
characterized in that the said hook (20) or said eyelet (8) is aligned at right angles to the surface of the said envelope (2).

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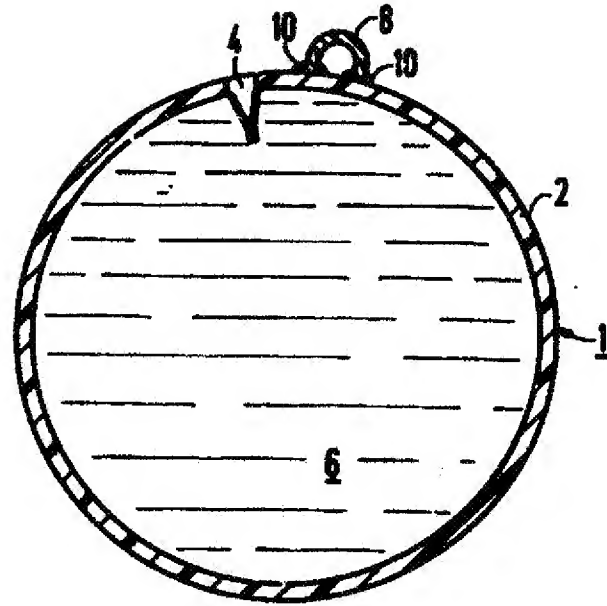


FIG 1

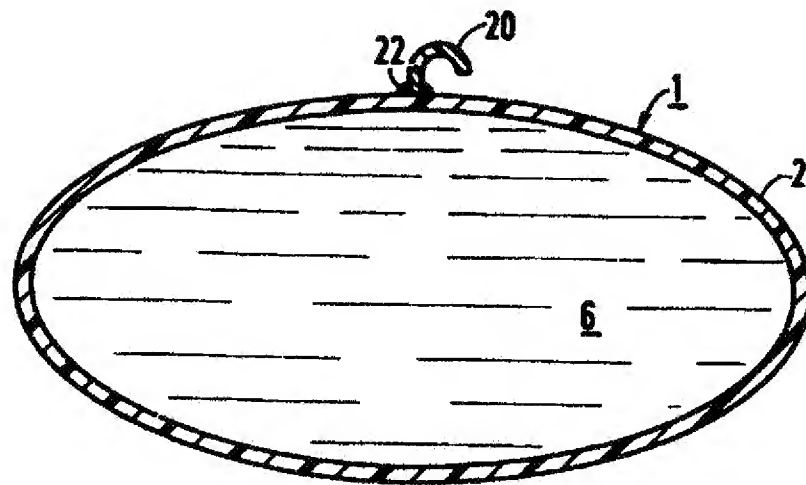


FIG 2